**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A modulator/demodulator system comprising:

a transmission system with a time scale and time delay encoding system which applies one of a plurality of time scales and one of a plurality of time delays to one of a pair of matching base signals, the transmission system combines the time scaled and time delayed base signal with the other one of the pair of base signals to form a doublet, and transmits the doublet, wherein the applied one of the plurality of time scales is less than one; and

a receiving system which receives the doublet and extracts information from ~~the doublet~~ between the time scaled and time delayed base signal and the other one of the pair of base signals based on the one of the plurality of time scales and the one of the plurality of time delays which were applied.

2. (Previously Presented) The system as set forth in claim 1 wherein the transmission system further comprises:

a signal generator which generates the pair of matching base signals;

the encoding system modulates the one of the plurality of time scales and the one of the plurality of time delays onto the one of the pair of matching base signals;

a combiner which combines the time scaled and time delayed base signal with the other one of the pair of base signals to form the doublet; and

a transmitter which transmits the doublet.

3. (Original) The system as set forth in claim 1 wherein the transmission system has a plurality of doublets with an independent one of a plurality of the time scales and independent one of the plurality of time delays applied to each of the doublets, the transmission system combines all of the doublets to form and transmit a composite signal; and

wherein the receiving system receives the composite signal and extracts the information from each of the doublets that comprise the composite signal based on the respective one of the plurality of time scale and the one of the plurality of time delay that were applied to each of the doublets.

4. (Currently Amended) A modulator/demodulator system comprising:

a transmission system with a time scale and time delay encoding system which applies one of a plurality of time scales and one of a plurality of time delays to one of a pair of matching base signals, wherein the applied one of the plurality of time scales is less than one, wherein the transmission system further comprises a pair of synchronized and spatially separated radiating elements, one radiating element radiates one of the matching base signals and the other radiating element radiates the time scaled and time delayed base signal wherein the one of the matching base signals and the time scaled and the time delayed base signal combine during the radiation to form a doublet; and

a receiving system which receives the doublet and extracts information from ~~the doublet~~ between the time scaled and time delayed base signal and the other one of the pair of base signals based on the one of the plurality of time scales and the one of the plurality of time delays which were applied.

5. (Previously Presented) The system as set forth in claim 1 wherein the at least one of the pair of matching base signals contains the information and the receiving system extracts the information from the at least one of the pair of matching base signals in the doublet.

6. (Original) The system as set forth in claim 2 wherein the combiner is an adder or a subtractor.

7. (Previously Presented) The system as set forth in claim 1 wherein the transmission system further comprises:

a temporal equalizer which substantially assures that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signal; and

a spectral equalizer which substantially assures that the signal energy is evenly distributed across the spectrum of the pair of matching base signals.

8. (Original) The system as set forth in claim 1 wherein the information comprises a message embedded by the transmission system.

9. (Original) The system as set forth in claim 1 wherein the information comprises imaging data embedded by an environment in which the doublet was transmitted.

10. (Original) The system as set forth in claim 1 wherein the receiving system further comprises:

a segmentation device that receives the doublet and forms received segments from the received doublet;

a time scaling device which applies at least one of the plurality of time scales to each of the received segments to form time scaled signal segments;

a time delaying device which applies at least one of the plurality of time delays to each of the received segments to form time delayed signal segments;

a multiplier which multiplies each of the time scaled signal segments with each of the time delayed signal segments to form multiplied signals;

an integrator which integrates the multiplied signals across time to form detection signals; and

a processing system which compares the detection signals at different ones of the plurality of time scales and different ones of the plurality of time delays over time to determine the applied one of the plurality of time scales and the applied one of the plurality of time delays to extract the information from the detection signal.

11. (Previously Presented) The system as set forth in claim 10 wherein the receiving system further comprises:

a temporal equalizer which substantially assures that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signals; and

a spectral equalizer which substantially assures that the signal energy is evenly distributed across the spectrum of the pair of matching base signals.

12. (Currently Amended) A modulation/demodulation method comprising:

applying one of a plurality of time scales and one of a plurality of time delays to one of a pair of matching base signals, wherein the applied one of the plurality of time scales is less than one;

combining the time scaled and time delayed base signal with the other one of the pair of base signals to form a doublet;

transmitting the doublet into the environment;

receiving the doublet; and

extracting information from ~~the doublet~~ between the time scaled and time delayed base signal and the other one of the pair of base signals based on the one of the plurality of time scales and on the one of the plurality of time delays which were applied.

13. (Currently Amended) A modulation/demodulation method comprising:

applying one of a plurality of time scales and one of a plurality of time delays to one of a pair of matching base signals, wherein the applied one of the plurality of time scales is less than one;

radiating one of the matching base signals from one of a pair of synchronized and spatially separated radiating elements;

radiating the time scaled and time delayed base signal from another one of the pair of synchronized and spatially separated radiating elements, wherein the radiated time scaled and time delayed base signal with the other one of the pair of base signals combine during the radiation to form a doublet;

receiving the doublet; and

extracting information from ~~the doublet~~ between the time scaled and time delayed base signal and the other one of the pair of base signals based on the one of the plurality of time scales and ~~on~~ the one of the plurality of time delays which were applied.

14. (Original) The method as set forth in claim 12 further comprising providing a plurality of doublets with each of the doublets having an independent one of the plurality of time scales and an independent one of the plurality of time delays applied to each of the doublets, combining all of the doublets to form a composite signal transmitting the composite signal into the environment, receiving the composite signal, and extracting the

information from the doublets that comprise the composite signal based on the respective one of the plurality of time scales and one of the plurality of time delays which were applied to each of the doublets.

15. (Previously Presented) The method as set forth in claim 12 further comprising imbedding information in one of the pair of matching base signals in the doublet.

16. (Original) The method as set forth in claim 12 wherein the combining comprises adding or subtracting the time scaled and time delayed base signal with the other one of the pair of base signals to form the doublet.

17. (Previously Presented) The method as set forth in claim 12 further comprising:

substantially assuring that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signals prior to the transmitting; and

substantially assuring that the signal energy is evenly distributed across the spectrum of the pair of matching base signals prior to the transmitting.

18. (Original) The method as set forth in claim 12 wherein the information comprises a message embedded prior to the transmission of the doublet.

19. (Original) The method as set forth in claim 12 wherein the information comprises imaging data embedded by an environment in which the doublet was transmitted.

20. (Original) The method as set forth in claim 12 wherein the receiving further comprises:

segmenting the received doublet to form received segments;

applying at least one of the plurality of time scales to each of the received segments to form time scaled signal segments;

applying at least one of the plurality of time delays to each of the received segments to form time delayed signal segments;

multiplying each of the time scaled signal segments with each of the time delayed signal segments to form multiplied signals;

integrating the multiplied signals across time to form detection signals; and

processing the detection signals at different ones of the plurality of time scales and different ones of the plurality of time delays over time to determine the applied one of the plurality of time scales and the applied one of the plurality of time delays to extract the information from the determined detection signal.

21. (Previously Presented) The method as set forth in claim 20 further comprising:

substantially assuring that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signals following the receiving; and

substantially assuring that the signal energy is evenly distributed across the spectrum of the pair of matching base signals following the receiving.

22 -55. (Cancelled).

56. (Currently Amended) A receiver system for receiving transmitted information comprising:

a receiver which receives a doublet, the doublet comprises at least two matching base signals where one of a plurality of time scales and one of a plurality of time delays are applied to at least one of the base signals before being combined with the other base signal; and

a processing system which extracts the information from between the time scaled and time delayed base signal and the other base signal which comprise the doublet based on the one of a plurality of time scales and the one of a plurality of time delays which ~~was~~ were applied ~~to the doublet prior to transmission~~, wherein the applied one of the plurality of time scales is less than one~~;~~

wherein the receiver further comprises a device that time scales a received signal from the doublet by the time scale that was applied to form a time scaled version of the received signal, a correlator that correlates the received signal with the time

scaled version of the received signal to form a time delay correlation signal, a detector that detects the peaks of this time delay correlation signal, and an estimator that uses the time delay locations of the peaks to estimate the angle of arrival of each of the received signals.

57. (Currently Amended) A receiver system for receiving transmitted information comprising:

a receiver which receives a doublet, the doublet comprises at least two matching base signals where one of a plurality of time scales is applied to at least one of the base signals before being combined with the other base signal; and

a processing system which extracts the information from between the time scaled base signal and the other base signal which comprise the doublet based on one of a plurality of time scales which was applied to the doublet prior to transmission, wherein the applied one of the plurality of time scales is less than one;

wherein the receiver receives a plurality of the doublets in a composite signal and the processing system extracts the information from the composite signal based on the one of the plurality of time scales which was applied to at least one of the base signals in each of the doublets.

58. (Previously Presented) The system as set forth in claim 56 wherein the processing system also extracts the information from the doublet based on one of a plurality of time delays which was applied to the doublet prior to transmission.

59. (Currently Amended) A receiver system for receiving transmitted information comprising:

a receiver which receives a doublet, the doublet comprises at least two matching base signals where one of a plurality of time scales is applied to at least one of the base signals before being combined with the other base signal; and

a processing system which extracts the information from between the time scaled base signal and the other base signal which comprise the doublet based on one of a plurality of time scales which was applied to the doublet prior to transmission, wherein the applied one of the plurality of time scales is less than one;

wherein the processing system further comprises:

a segmentation device that receives the doublet and forms received segments from the received doublet;

a time scaling device which applies at least one of the plurality of time scales to each of the received segments to form time scaled signal segments;

a time delaying device which applies at least one of the plurality of time delays to each of the received segments to form time delayed signal segments;

a multiplier which multiplies each of the time scaled signal segments with each of the time delayed signal segments to form multiplied signals; and

an integrator which integrates the multiplied signals across time to form detection signals, the processing system comparing the detection signals at different ones of the plurality of time scales and different ones of the plurality of time delays over time to determine the applied one of the plurality of time scales and the applied one of the plurality of time delays to extract the information from the detection signal.

60. (Currently Amended) A receiver system for receiving transmitted information comprising:

a receiver which receives a doublet, the doublet comprises at least two matching base signals where one of a plurality of time scales is applied to at least one of the base signals before being combined with the other base signal; and

a processing system which extracts the information from between the time scaled base signal and the other base signal which comprise the doublet based on one of a plurality of time scales which was applied ~~to the doublet prior to transmission~~, wherein the applied one of the plurality of time scales is less than one;

wherein the receiver further comprises:

a temporal equalizer which substantially assures that signal energy of the ~~pair of~~ matching base signals is evenly distributed across the duration of the ~~pair of~~ matching base signals; and

a spectral equalizer which substantially assures that the signal energy is evenly distributed across the spectrum of the ~~pair of~~ matching base signals.

61. (Cancelled).

62. (Currently Amended) A receiving method for receiving information comprising:

receiving a plurality of doublets contained in a composite signal, each of the doublets comprises at least two matching base signals where one of a plurality of time scales is applied to at least one of the base signals before being combined with the other base signal; and

extracting information from the composite signal based on one of a plurality of time scales which was applied to at least one of the base signals in each of the doublets, wherein the applied one of the plurality of time scales is less than one.

63 -64. (Canceled).

65. (Currently Amended) A receiving method for receiving information comprising:

receiving a doublet, the doublet comprises at least two matching base signals where one of a plurality of time scales is applied to at least one of the base signals before being combined with the other base signal; and

extracting information from between the time scaled base signal and the other base signal which comprise the doublet based on one of a plurality of time scales which was applied ~~to the doublet~~, wherein the applied one of the plurality of time scales is less than one;

wherein the information comprises imaging data embedded by an environment in which the doublet was transmitted.

66. (Currently Amended) A receiving method for receiving information comprising:

receiving a doublet, the doublet comprises at least two matching base signals where one of a plurality of time scales and one of a plurality of time delays is applied to at least one of the base signals before being combined with the other base signal; and

extracting information from between the time scaled and time delayed base signal and the other base signal which comprise the doublet based on the one of a plurality of time scales and the one of a plurality of time delays which ~~was~~ were applied ~~to the doublet~~, wherein the applied one of the plurality of time scales is less than one;

wherein the extracting further comprises:

segmenting the received doublet to form received segments;

applying at least one of the plurality of time scales to each of the received segments to form time scaled signal segments;

applying at least one of the plurality of time delays to each of the received segments to form time delayed signal segments;

multiplying each of the time scaled signal segments with each of the time delayed signal segments to form multiplied signals; and

integrating the multiplied signals across time to form detection signals, wherein the extracting further comprises processing the detection signals at different ones of the plurality of time scales and different ones of the plurality of time delays over time to determine the applied one of the plurality of time scales and the applied one of the plurality of time delays to extract the information from the determined detection signal.

67. (Currently Amended) A receiving method for receiving information comprising:

receiving a doublet comprising a combined pair of matching base signals where one of a plurality of time scales is applied to at least one of the base signals before being combined with the other base signal;

extracting information from between the time scaled base signal and the other base signal which comprise the doublet based on the one of a plurality of time scales which was applied ~~to the doublet~~, wherein the applied one of the plurality of time scales is less than one;

substantially assuring that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signals following the receiving; and

substantially assuring that the signal energy is evenly distributed across the spectrum of the pair of matching base signals following the receiving.

68. (Currently Amended) A receiving method for receiving information comprising:

receiving a doublet comprising a combined ~~pair of~~ matching base signals where one of a plurality of time scales is applied to at least one of the base signals before being combined with the other base signal; and

extracting information from ~~one of the pair of matching base signals in the doublet~~ between the time scaled base signal and the other base signal based on the one of a plurality of time scales which was applied ~~to the doublet~~, wherein the applied one of the plurality of time scales is less than one.

69. (Currently Amended) A communication system comprising:

a transmission system with a time scale and time delay encoding system embeds communication information by applying one of a plurality of time scales and one of a plurality of time delays to one of a pair of matching base signals, the transmission system combines the time scaled and time delayed base signal with the other one of the pair of base signals to form a doublet, and transmits the doublet, wherein the applied one of the plurality of time scales is less than one; and

a receiving system which receives the doublet and extracts information from ~~the doublet~~ between the time scaled and time delayed base signal and the other one of the pair of base signals based on the one of the plurality of time scales and the one of the plurality of time delays which were applied.

70. (Previously Presented) The system as set forth in claim 69 wherein the transmission system further comprises:

a signal generator which generates the pair of matching base signals;

the encoding system embeds the communication information by modulating the one of the plurality of time scales and the one of the plurality of time delays onto the one of the pair of matching base signals;

a combiner which combines the time scaled and time delayed base signal with the other one of the pair of base signals to form the doublet; and

a transmitter which transmits the doublet.

71. (Original) The system as set forth in claim 69 wherein the transmission system has a plurality of doublets with an independent one of a plurality of the time scales and independent one of the plurality of time delays applied to each of the doublets, the transmission system combines all of the doublets to form and transmit a composite signal; and

wherein the receiving system receives the composite signal and extracts the information from each of the doublets that comprise the composite signal based on the respective one of the plurality of time scale and the one of the plurality of time delay that were applied to each of the doublets.

72. (Previously Presented) The system as set forth in claim 69 wherein the at least one of the pair of matching base signals contains additional information and the receiving system extracts the additional information from the at least one of the pair of matching base signals in the doublet with the additional information.

73. (Original) The system as set forth in claim 70 wherein the combiner is an adder or a subtractor.

74. (Previously Presented) The system as set forth in claim 69 wherein the transmission system further comprises:

a temporal equalizer which substantially assures that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signal; and

a spectral equalizer which substantially assures that the signal energy is evenly distributed across the spectrum of the pair of matching base signals.

75. (Original) The system as set forth in claim 69 wherein the receiving system further comprises:

a segmentation device that receives the doublet and forms received segments from the received doublet;

a time scaling device which applies at least one of the plurality of time scales to each of the received segments to form time scaled signal segments;

a time delaying device which applies at least one of the plurality of time delays to each of the received segments to form time delayed signal segments;

a multiplier which multiplies each of the time scaled signal segments with each of the time delayed signal segments to form multiplied signals;

an integrator which integrates the multiplied signals across time to form detection signals; and

a processing system which compares the detection signals at different ones of the plurality of time scales and different ones of the plurality of time delays over time to determine the applied one of the plurality of time scales and the applied one of the plurality of time delays to extract the communication information from the detection signal.

76. (Previously Presented) The system as set forth in claim 75 wherein the receiving system further comprises:

a temporal equalizer which substantially assures that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signals; and

a spectral equalizer which substantially assures that the signal energy is evenly distributed across the spectrum of the pair of matching base signals.

77. (Currently Amended) A method for communicating comprising:

applying one of a plurality of time scales and one of a plurality of time delays to one of a pair of matching base signals to embed communication information, wherein the applied one of the plurality of time scales is less than one;

combining the time scaled and time delayed base signal with the other one of the pair of base signals to form a doublet;

transmitting the doublet into the environment;

receiving the doublet; and

extracting the communication information from ~~the doublet~~ between the time scaled and time delayed base signal and the other one of the pair of base signals based on the one of the plurality of time scales and on the one of the plurality of time delays which were applied.

78. (Original) The method as set forth in claim 77 further comprising providing a plurality of doublets with each of the doublets having an independent one of the plurality of time scales and an independent one of the plurality of time delays applied to each of the doublets to embed the communication information, combining all of the doublets to form a composite signal, transmitting the composite signal into the environment, receiving the composite signal, and extracting the communication information from the doublets that comprise the composite signal based on the respective one of the plurality of time scales and one of the plurality of time delays which were applied to each of the doublets.

79. (Previously Presented) The method as set forth in claim 77 further comprising imbedding additional information in one of the pair of matching base signals in the doublet.

80. (Original) The method as set forth in claim 77 wherein the combining comprises adding or subtracting the time scaled and time delayed base signal with the other one of the pair of base signals to form the doublet.

81. (Previously Presented) The method as set forth in claim 77 further comprising:

substantially assuring that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signals prior to the transmitting; and

substantially assuring that the signal energy is evenly distributed across the spectrum of the pair of matching base signals prior to the transmitting.

82. (Original) The method as set forth in claim 77 wherein the receiving further comprises:

segmenting the received doublet to form received segments;

applying at least one of the plurality of time scales to each of the received segments to form time scaled signal segments;

applying at least one of the plurality of time delays to each of the received segments to form time delayed signal segments;

multiplying each of the time scaled signal segments with each of the time delayed signal segments to form multiplied signals;

integrating the multiplied signals across time to form detection signals; and

processing the detection signals at different ones of the plurality of time scales and different ones of the plurality of time delays over time to determine the applied one of the plurality of time scales and the applied one of the plurality of time delays to extract the communication information from the determined detection signal.

83. (Previously Presented) The method as set forth in claim 82 further comprising:

substantially assuring that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signals following the receiving; and

substantially assuring that the signal energy is evenly distributed across the spectrum of the pair of matching base signals following the receiving.

84. (Currently Amended) An imaging system comprising:

a transmission system with a time scale and time delay encoding system which applies one of a plurality of time scales and one of a plurality of time delays to one of a pair of matching base signals, combines the time scaled and time delayed base signal with the other one of the pair of base signals to form a doublet, and transmits the doublet into an environment which embeds imaging information in the doublet, wherein the applied one of the plurality of time scales is less than one; and

a receiving system which receives the doublet and extracts the imaging information from ~~the doublet~~ between the time scaled and time delayed base signal and the other one of the pair of base signals based on the one of the plurality of time scales and the one of the plurality of time delays which were applied.

85. (Previously Presented) The system as set forth in claim 84 wherein the transmission system further comprises:

a signal generator which generates the pair of matching base signals;

the encoding system modulates the one of the plurality of time scales and the one of the plurality of time delays onto the one of the pair of matching base signals;

a combiner which combines the time scaled and time delayed base signal with the other one of the pair of base signals to form the doublet; and

a transmitter which transmits the doublet into the environment which embeds the imaging information.

86. (Original) The system as set forth in claim 84 wherein the transmission system has a plurality of doublets with an independent one of a plurality of the time scale and independent one of the plurality of time delay applied to each of the doublets, combines all of the doublets to form a composite signal, and transmits the composite signal; and

wherein the receiving system receives the composite signal and extracts the information from each of the doublets that comprise the composite signal based on the respective one of the plurality of time scale and the one of the plurality of time delay that were applied to each of the doublets.

87. (Currently Amended) An imaging system comprising:

a transmission system with a time scale and time delay encoding system which applies one of a plurality of time scales and one of a plurality of time delays to one of a pair of matching base signals, wherein the applied one of the plurality of time scales is less than one, wherein the transmission system further comprises a pair of synchronized and spatially separated radiating elements, one radiating element radiates one of the matching base signals and the other radiating element radiates the time scaled and time delayed base signal into the environment which embeds the imaging information wherein the one of the matching base signals and the time scaled and the time delayed base signal combine in the environment to form a doublet; and

a receiving system which receives the doublet and extracts the imaging information from ~~the doublet~~ between the time scaled and time delayed base signal and the other one of the pair of base signals based on the one of the plurality of time scales and the one of the plurality of time delays which were applied.

88. (Original) The system as set forth in claim 85 wherein the combiner is an adder or a subtractor.

89. (Previously Presented) The system as set forth in claim 84 wherein the transmission system further comprises:

a temporal equalizer which substantially assures that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signal; and

a spectral equalizer which substantially assures that the signal energy is evenly distributed across the spectrum of the pair of matching base signals.

90. (Original) The system as set forth in claim 84 wherein the receiving system further comprises:

a segmentation device that receives the doublet and forms received segments from the received doublet;

a time scaling device which applies at least one of the plurality of time scales to each of the received segments to form time scaled signal segments;

a time delaying device which applies at least one of the plurality of time delays to each of the received segments to form time delayed signal segments;

a multiplier which multiplies each of the time scaled signal segments with each of the time delayed signal segments to form multiplied signals;

an integrator which integrates the multiplied signals across time to form detection signals; and

a processing system which compares the detection signals at different ones of the plurality of time scales and different ones of the plurality of time delays over time to determine the applied one of the plurality of time scales and the applied one of the plurality of time delays to extract the imaging information from the detection signals.

91. (Previously Presented) The system as set forth in claim 90 wherein the receiving system further comprises:

a temporal equalizer which substantially assures that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signals; and

a spectral equalizer which substantially assures that the signal energy is evenly distributed across the spectrum of the pair of matching base signals.

92. (Currently Amended) A method for imaging comprising:

applying one of a plurality of time scales and one of a plurality of time delays to one of a pair of matching base signals, wherein the applied one of the plurality of time scales is less than one;

combining the time scaled and time delayed base signal with the other one of the pair of base signals to form a doublet;

transmitting the doublet into the environment that embeds ~~the~~ imaging information;

receiving the doublet; and

extracting the imaging information from ~~the doublet~~ between the time scaled and time delayed base signal and the other one of the pair of base signals based on the one of the plurality of time scales and on the one of the plurality of time delays which were applied.

93. (Currently Amended) A method for imaging comprising:

applying one of a plurality of time scales and one of a plurality of time delays to one of a pair of matching base signals, wherein the applied one of the plurality of time scales is less than one;

radiating one of the matching base signals from one of a pair of synchronized and spatially separated radiating elements;

radiating the time scaled and time delayed base signal from another one of the pair of synchronized and spatially separated radiating elements, wherein the radiated time scaled and time delayed base signal with the other one of the pair of base signals combine during the radiation to form a doublet;

receiving the doublet; and

extracting the imaging information from ~~the doublet~~ between the time scaled and time delayed base signal and the other one of the pair of base signals based on the one of the plurality of time scales and on the one of the plurality of time delays which were applied.

94. (Original) The method as set forth in claim 93 further comprising providing a plurality of doublets with each of the doublets having an independent one of the

plurality of time scales and an independent one of the plurality of time delays applied to each of the doublets, combining all of the doublets to form a composite signal , transmitting the composite signal into the environment which embeds the imaging information, receiving the composite signal, and extracting the imaging information from the doublets that comprise the composite signal based on the respective one of the plurality of time scales and one of the plurality of time delays which were applied to each of the doublets.

95. (Original) The method as set forth in claim 92 wherein the combining comprises adding or subtracting the time scaled and time delayed base signal with the other one of the pair of base signals to form the doublet.

96. (Previously Presented) The method as set forth in claim 92 further comprising:

substantially assuring that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signals prior to the transmitting; and

substantially assuring that the signal energy is evenly distributed across the spectrum of the pair of matching base signals prior to the transmitting.

97. (Original) The method as set forth in claim 92 wherein the receiving further comprises:

segmenting the received doublet to form received segments;

applying at least one of the plurality of time scales to each of the received segments to form time scaled signal segments;

applying at least one of the plurality of time delays to each of the received segments to form time delayed signal segments;

multiplying each of the time scaled signal segments with each of the time delayed signal segments to form multiplied signals;

integrating the multiplied signals across time to form detection signals; and

processing the detection signals at different ones of the plurality of time scales and different ones of the plurality of time delays over time to determine the

applied one of the plurality of time scales and the applied one of the plurality of time delays to extract the imaging information from the determined detection signal.

98. (Previously Presented) The method as set forth in claim 97 further comprising:

substantially assuring that signal energy of the pair of matching base signals is evenly distributed across the duration of the pair of matching base signals following the receiving; and

substantially assuring that the signal energy is evenly distributed across the spectrum of the pair of matching base signals following the receiving.

99. (Previously Presented) The system as set forth in claim 1 wherein the transmission system applies the one of a plurality of time scales without spread-spectrum modulation.

100. (Previously Presented) The method as set forth in claim 12 wherein the applying further comprises applies one of the plurality of time scales without spread-spectrum modulation.

101. (Previously Presented) The system as set forth in claim 56 wherein the device that time scales the received signal time scales the received signal without spread-spectrum modulation.

102. (Previously Presented) The system as set forth in claim 57 wherein the processing system extracts the information from the doublet based on one of the plurality of time scales without spread spectrum modulation.

103. (Previously Presented) The system as set forth in claim 59 wherein the time scaling device applies the at least one of the plurality of time scales without spread spectrum modulation.

104. (Previously Presented) The system as set forth in claim 60 wherein the processing system extracts the information from the doublet based on one of the plurality of time scales without spread spectrum modulation.

105. (Previously Presented) The method as set forth in claim 62 wherein the extracting information from the composite signal based on one of the plurality of time scales is extracted based on one of the plurality of time scales without spread spectrum modulation.

106. (Previously Presented) The method as set forth in claim 65 wherein the extracting information from the doublet based on one of the plurality of time scales is extracted based on one of the plurality of time scales without spread spectrum modulation.

107. (Previously Presented) The method as set forth in claim 66 wherein the applying at least one of the plurality of time scales applies one of the plurality of time scales with spread spectrum modulation.

108. (Previously Presented) The method as set forth in claim 67 wherein the extracting information from the doublet based on one of the plurality of time scales is extracted based on one of the plurality of time scales without spread spectrum modulation.

109. (Previously Presented) The method as set forth in claim 68 wherein the extracting information from one of the pair of matching base signals in the doublet based on one of the plurality of time scales is extracted based on one of the plurality of time scales without spread spectrum modulation.

110. (Previously Presented) The system as set forth in claim 69 wherein the transmission system embeds communication information by applying one of the plurality of time scales without spread spectrum modulation.

111. (Previously Presented) The method as set forth in claim 77 wherein the applying one of the plurality of time scales is applied without spread spectrum modulation.

112. (Previously Presented) The system as set forth in claim 84 wherein the transmission system applies one of the plurality of time scales without spread spectrum modulation.

113. (Previously Presented) The method as set forth in claim 92 wherein the applying one of the plurality of time scales is applied without spread spectrum modulation.

114. (Previously Presented) The system as set forth in claim 1 wherein the time scaled and time delayed base signal and the other one of the pair of base signals which are combined into the doublet are matching in frequency.

115. (Previously Presented) The method as set forth in claim 12 wherein the time scaled and time delayed base signal combined with the other one of the pair of base signals to form the doublet are matching in frequency.

116. (Previously Presented) The system as set forth in claim 56 wherein the signals in the received doublet are matching in frequency.

117. (Previously Presented) The system as set forth in claim 57 wherein the signals in the received doublet are matching in frequency.

118. (Previously Presented) The system as set forth in claim 59 wherein the signals in the received doublet are matching in frequency.

119. (Previously Presented) The system as set forth in claim 60 wherein the signals in the received doublet are matching in frequency.

120. (Previously Presented) The method as set forth in claim 62 wherein the signals in each of the received doublets are matching in frequency.

121. (Previously Presented) The method as set forth in claim 65 wherein the signals in the received doublet are substantially matched in frequency.

122. (Previously Presented) The method as set forth in claim 66 wherein the signals in the received doublet are substantially matched in frequency.

123. (Previously Presented) The method as set forth in claim 67 wherein the signals in the received doublet are substantially matched in frequency.

124. (Previously Presented) The method as set forth in claim 68 wherein the signals in the received doublet are substantially matched in frequency.

125. (Previously Presented) The system as set forth in claim 69 wherein the signals in the received doublet are substantially matched in frequency.

126. (Previously Presented) The method as set forth in claim 77 wherein the signals in the received doublet are substantially matched in frequency.

127. (Previously Presented) The system as set forth in claim 84 wherein the signals in the received doublet are substantially matched in frequency.

128. (Previously Presented) The method as set forth in claim 92 wherein the signals in the received doublet are substantially matched in frequency.